
Light-Duty Automotive Technology,
Carbon Dioxide Emissions, and Fuel
Economy Trends:
1975 Through 2011

Executive Summary

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Transportation and Climate Division

Office of Transportation and Air Quality
U.S. Environmental Protection Agency

NOTICE

This technical report does not necessarily represent final EPA decisions or positions. It is intended to present technical analysis of issues using data that are currently available. The purpose in the release of such reports is to facilitate the exchange of technical information and to inform the public of technical developments.

I. Executive Summary

Introduction

This report summarizes key trends in carbon dioxide (CO₂) emissions, fuel economy, and CO₂- and fuel economy-related technology for gasoline- and diesel-fueled personal vehicles sold in the United States, from model years (MY) 1975 through 2011. Personal vehicles are those vehicles that EPA classifies as cars, light-duty trucks (sport utility vehicles, minivans, vans, and pickup trucks with gross vehicle weight ratings up to 8500 pounds), or, beginning in MY 2011, medium-duty passenger vehicles (sport utility vehicles or passenger vans with gross vehicle weight ratings between 8500 and 10,000 pounds). The data in this report cover the MY 1975-2011 timeframe, supersede the data in previous reports in this series, and should not be compared with data from previous years' editions of this report due to changes discussed below. Except when noted, CO₂ emissions and fuel economy values in this report have been adjusted to reflect "real world" consumer performance and therefore are not comparable to CO₂ emissions and fuel economy standards.

Data for MY 2010 are final, but data for MY 2011 are preliminary. The fleetwide average real world MY 2010 personal vehicle CO₂ emissions value is 394 grams per mile (g/mi) and fuel economy is 22.6 miles per gallon (mpg), both slight improvements over MY 2009 and the most favorable levels since this analysis began in 1975. Preliminary projections for MY 2011 are for continued slight improvements for both CO₂ emissions and fuel economy. For more discussion of the key conclusions of this report, see the five Highlights at the end of this Executive Summary.

What's New This Year

Most small, 2 wheel drive SUVs have been reclassified from trucks to cars for the entire MY 1975-2011 database. This reflects a regulatory change made by the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) for Corporate Average Fuel Economy (CAFE) standards beginning in MY 2011 and which will apply for the joint EPA/NHTSA greenhouse gas emissions and CAFE standards that have been finalized for MY 2012-2016 and proposed for MY 2017-2025. Some examples of the impacts of this change are that, for MY 2010, nearly 1.1 million vehicles are classified as cars that in previous years would have been classified as trucks, the absolute truck share is nearly 10% lower, the projected average adjusted CO₂ emissions for cars are about 9 g/mi higher, the projected average adjusted CO₂ emissions for light trucks are 17 g/mi higher, and the projected average adjusted fuel economies for cars and for light trucks are both 0.7 mpg lower than they would have been under the previous classification approach. Since this classification change does not affect the overall number of vehicles, or vehicle emissions/fuel economy performance, it has no impact on the average adjusted CO₂ emissions and fuel economy for the overall (car plus light truck) fleet. When the car fleet is further subdivided into sub-classes, these reclassified vehicles are referred to as "non-truck SUVs," while the remaining SUVs are termed "truck SUVs."

Beginning with MY 2011, the database now includes medium-duty passenger vehicles (MDPVs), which include larger sport utility vehicles (SUVs) and passenger vans, but not the larger pickup trucks, in the 8500-10,000 pound gross vehicle weight rating (GVWR) range. This change was made because NHTSA includes MDPVs in its CAFE standards beginning with MY 2011, and EPA and NHTSA include MDPVs in future greenhouse gas emissions and CAFE standards (and vehicle labels as well). While EPA will be including MDPV data for all years beginning with MY 2011, EPA does not have data for MDPVs for MY 1975-2010, so there is and will continue to be a very small discontinuity in the database beginning in MY 2011. The inclusion of MDPVs in MY 2011 increases projected average adjusted CO₂ emissions for light trucks by about 0.5 g/mi (even less for the overall fleet

decreases projected average adjusted fuel economy for light trucks by 0.02 mpg (less for the overall fleet) compared to the fleet without MDPVs.

Important Explanation of Data Contained in This Report

Final MY 2010 data are based on formal end-of-year CAFE reports submitted by automakers to EPA and will not change. The preliminary MY 2011 data in this report are based on confidential pre-model year production volume projections provided to EPA by automakers during MY 2010 for the fuel economy label program. Accordingly, there is uncertainty in the MY 2011 data used in this report. For example, while the final MY 2010 values for CO₂ emissions and fuel economy in this report are essentially the same as the projected MY 2010 values that were provided in last year's report, in some previous years the preliminary projections were not good predictors of actual CO₂ and fuel economy performance. This report will often focus on the final MY 2010 data, rather than on the preliminary MY 2011 data, as we have done in prior reports.

The reader is advised to be cautious in making data comparisons between MY 2009 and MY 2010 as the former was a year of considerable turmoil in the automotive market. Due primarily to the economic recession, light-duty vehicle production was 34% lower in MY 2009 than in MY 2008, and the lowest since the database began in 1975.

The great majority of the CO₂ emissions and fuel economy values in this report are adjusted (ADJ) EPA real-world estimates provided to consumers and based on EPA's 5-cycle test methodology (which represent city, highway, high speed/high acceleration, high temperature/air conditioning, and cold temperature driving) that was first implemented in MY 2008. Appendix A provides a detailed explanation of the method used to calculate these adjusted fuel economy and CO₂ values, which last changed with the 2007 version of this report. In 2011, EPA and NHTSA revised the fuel economy and environment label to include, among other things, CO₂ emissions per mile and a fuel economy and greenhouse gas emissions rating (76 Federal Register 39478, July 6, 2011).

In some tables, the report also provides unadjusted EPA laboratory (LAB) values, which are based on a 2-cycle test methodology (city and highway tests only) and are the basis for automaker compliance with CO₂ emissions and CAFE standards. All combinations of adjusted or laboratory, and CO₂ emissions or fuel economy values, may be reported as city, highway, or, most commonly, as composite (combined city/highway, or COMP).

Because the underlying methodology for generating unadjusted laboratory CO₂ emissions and fuel economy values has not changed since this series began in the mid-1970s, these values provide a basis for comparing long-term CO₂ emissions and fuel economy trends from the perspective of vehicle design, apart from the factors that affect real-world driving that are reflected in the adjusted values. These unadjusted laboratory values form the basis for automaker compliance with CO₂ emissions and CAFE standards. Laboratory composite values represent a harmonic average of 55 percent city and 45 percent highway operation, or "55/45." For 2005 and later model years, unadjusted laboratory composite CO₂ emissions values are, on average, about 20 percent lower than adjusted composite CO₂ values, and unadjusted laboratory composite fuel economy values are, on average, about 25 percent greater than adjusted composite fuel economy values.

Regulatory Context

CAFE standards have been in place since 1978. NHTSA has the responsibility for setting and enforcing CAFE standards. EPA is responsible for establishing fuel economy test procedures and calculation methods, and for collecting data used to determine vehicle fuel economy and manufacturer CAFE levels. For MY 2011, the footprint-based CAFE standards are projected to achieve average industry-wide compliance levels of 30.4 mpg for cars

(including a 27.8 mpg alternative minimum standard for domestic cars for all manufacturers) and 24.4 mpg for light trucks (75 FR 25330, May 7, 2010). There are no greenhouse gas emissions standards for MY 2011.

For MY 2012 and later, EPA and NHTSA have been jointly developing a harmonized National Program to establish EPA greenhouse gas emissions standards and NHTSA CAFE standards that allow manufacturers to build a single national fleet to meet requirements of both programs while ensuring that consumers have a full range of vehicle choices. The National Program has been supported by a wide range of stakeholders: most major automakers, the United Auto Workers, the State of California, and major consumer and environmental groups.

In 2010, the agencies finalized the first harmonized standards for MY 2012-2016 (75 Federal Register 25324, May 7, 2010). The standards for MY 2012 are now in effect. By MY 2016, the average industry-wide compliance levels for these footprint-based standards are projected to be 250 g/mi CO₂ and 34.1 mpg CAFE. The 250 g/mi CO₂ compliance level would be equivalent to 35.5 mpg if all CO₂ emissions reductions are achieved through fuel economy improvements. In 2011, the agencies proposed additional harmonized standards for MY 2017-2025 (76 FR 74854, December 1, 2011). Under the currently-proposed footprint-based standards, by MY 2025 the average industry-wide compliance levels are projected to be 163 g/mi CO₂ and 49.6 mpg CAFE. The 163 g/mi CO₂ compliance level would be equivalent to 54.5 mpg if all CO₂ emissions reductions are achieved solely through improvements in fuel economy. For both MY 2012-2016 and MY 2017-2025, the agencies expect that a portion of the required CO₂ emissions improvements will be achieved by reductions in air conditioner refrigerant leakage, which would not contribute to higher fuel economy.

These projected levels for MY 2025 represent an approximate halving of CO₂ emissions and doubling of fuel economy levels since the National Program was announced in May 2009. Taken together, the MY 2011 CAFE standards, the MY 2012-2016 greenhouse gas emissions and CAFE standards, and the proposed MY 2017-2025 greenhouse gas emissions and CAFE standards are projected to save approximately 6 billion metric tons of greenhouse gas emissions and 12 billion barrels of oil over the lifetimes of the vehicles produced in MY 2011-2025. Based on the agencies' most recent estimates of the cost and effectiveness of future technologies, Department of Energy forecasts of future fuel prices, and other assumptions, the fuel savings to consumers are projected to far outweigh the higher initial cost of the vehicle technology that will be necessary to meet the new standards.

With real world (i.e., 5-cycle label) adjustments, alternative fuel vehicle credits, and test procedure adjustments, fleetwide CAFE compliance values are a minimum of 25 percent higher than EPA adjusted (5-cycle) fuel economy values. See Appendix A for a detailed comparison of EPA adjusted and laboratory fuel economy values and CAFE compliance values.

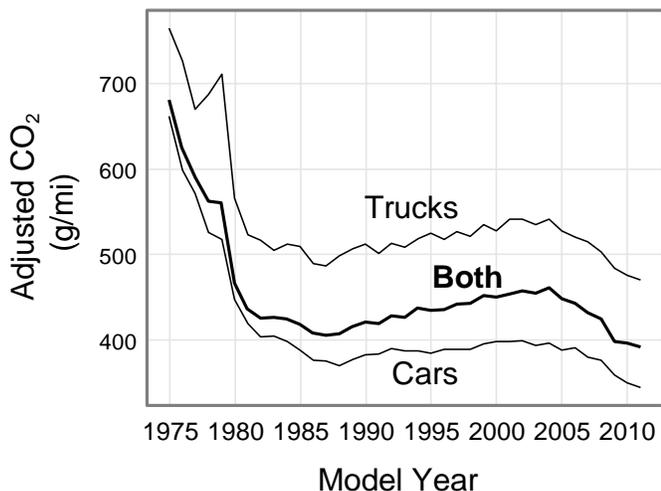
Highlight #1: MY 2010 had the lowest CO₂ emission rate and highest fuel economy since the database began in 1975.

MY 2010 adjusted composite CO₂ emissions were 394 g/mi, a record low for the post-1975 database and a 3 g/mi decrease relative to MY 2009. MY 2010 adjusted composite fuel economy was 22.6 mpg, an all-time high since the database began in 1975, and 0.2 mpg higher than in MY 2009. Preliminary MY 2011 values are 391 g/mi CO₂ emissions and 22.8 mpg fuel economy, reflecting slight improvements over MY 2010.

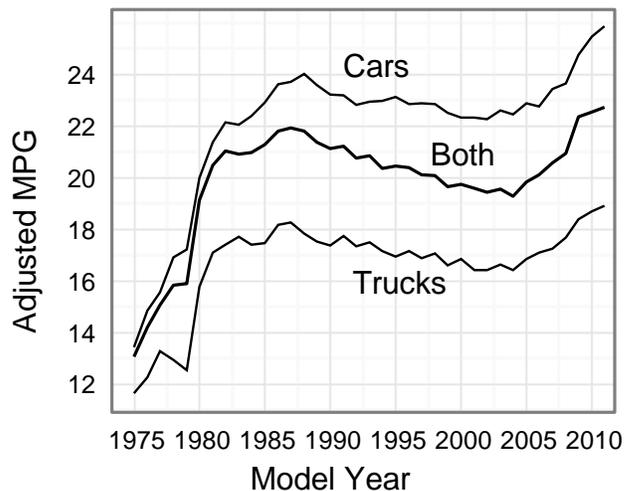
While year-to-year changes often receive the most public attention, the greatest value of the historical trends database is the identification and documentation of long-term trends. Since 1975, overall new light-duty vehicle CO₂ emissions have moved through four phases: 1) a rapid decrease from MY 1975 through MY 1981; 2) a slower decrease until reaching a valley in MY 1987; 3) a gradual increase until MY 2004; and 4) a decrease for the seven years beginning in MY 2005, with the largest decrease in MY 2009. Since fuel economy has an inverse relationship to tailpipe CO₂ emissions, overall new light-duty vehicle fuel economy has moved in opposite phases.

The recent improvements in CO₂ emissions and fuel economy reverse the trend of increasing CO₂ emissions and decreasing fuel economy that occurred from MY 1987 through MY 2004. From MY 2004 to MY 2010, CO₂ emissions decreased by 67 g/mi (15 percent), and fuel economy increased by 3.3 mpg (17 percent). Prior to MY 2009, the previous records for lowest CO₂ emissions and highest fuel economy were in MY 1987. Compared to MY 1987, MY 2010 CO₂ emissions were 11 g/mi (3 percent) lower, and fuel economy was 0.6 mpg (3 percent) higher.

Adjusted CO₂ Emissions



Adjusted Fuel Economy



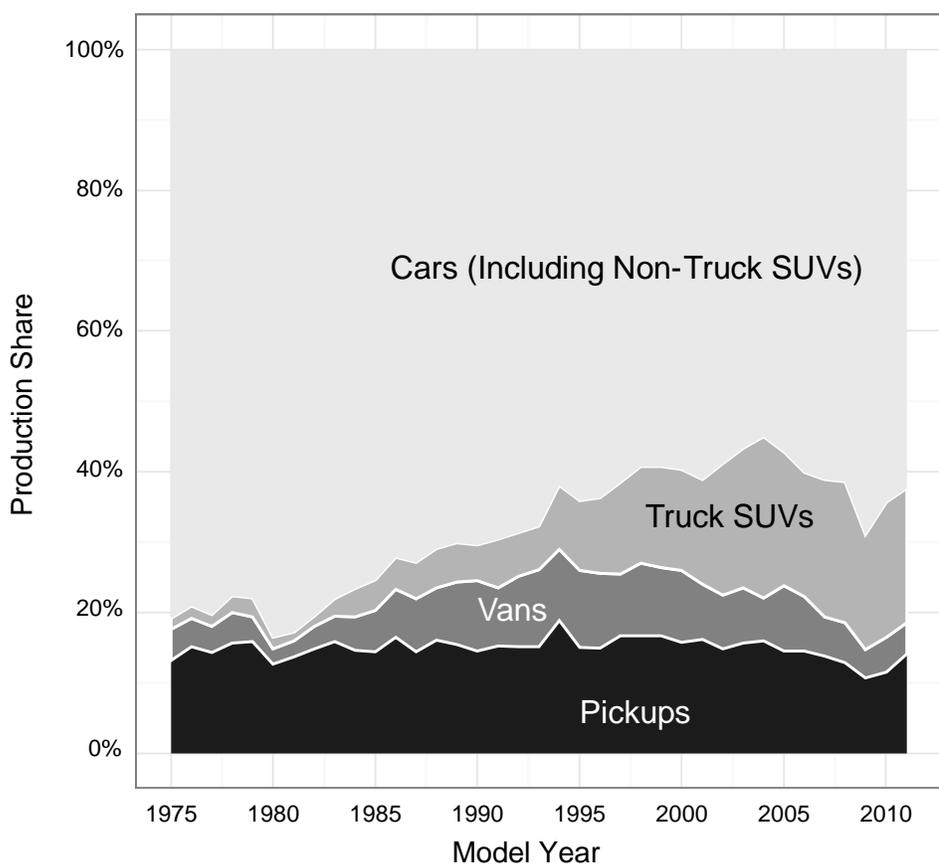
MY 2010 unadjusted laboratory composite values, which reflect vehicle design considerations only and do not account for the many factors which affect real world CO₂ emissions and fuel economy performance, were also at an all-time low for CO₂ emissions (313 g/mi) and a record high for fuel economy (28.4 mpg) since the database began in 1975.

Highlight #2: MY 2010 truck market share increased by 5 percent compared to MY 2009, but is at the second lowest level since 1996.

Light trucks, which include SUVs, minivans/vans, and pickup trucks, accounted for 36 percent of all light-duty vehicle sales in MY 2010. This represents a 5 percent increase over MY 2009, but that was a year of market turmoil and MY 2009 truck share was 8 percent lower than MY 2008. Truck market share is now at the second lowest level since MY 1996 and 9 percent lower than the peak in MY 2004. The MY 2011 light truck market share is projected to be 38 percent, based on pre-model year production projections by automakers.

There were two changes to the database this year that affect truck market share. The first change, as discussed above, is that most small, 2 wheel drive SUVs from MY 1975-2011 have been reclassified from trucks to cars. This lowers the absolute truck share, particularly since the mid-1980s when SUV sales began to increase rapidly, so truck share values in this report should not be compared to those in past versions of this report. For example, for MY 2010 data in this report, nearly 1.1 million vehicles are reclassified from trucks to cars, representing a 10 percent absolute change in both the car and truck production share. The second change, also discussed above, is that, for the first time, the preliminary data for MY 2011 include MDPVs. EPA does not have data for MDPVs for MY 1975-2010, so there is a small discontinuity in the database beginning in MY 2011. The projected production volume for MDPVs in MY 2011 is approximately 10,000 vehicles, which increases the projected truck share of the overall fleet in MY 2011 by less than 0.1 percent.

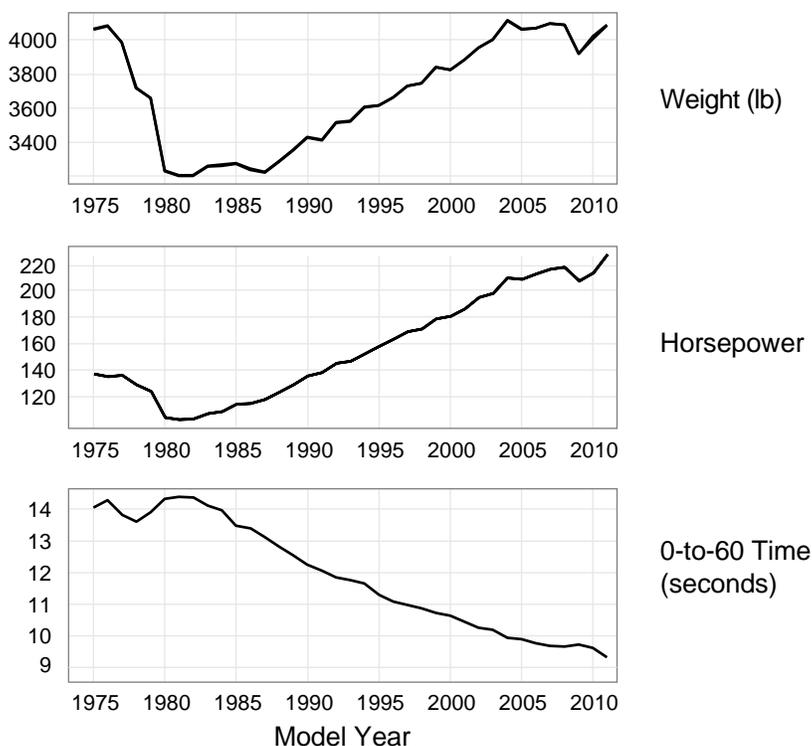
Production Share by Vehicle Type



Highlight #3: MY 2010 weight and power increased from MY 2009, but decreased relative to MY 2008.

MY 2010 vehicle weight averaged 4002 pounds, an increase of 85 pounds compared to MY 2009, but the second lowest average weight since MY 2004. The average car and truck weight both increased by about 25 pounds each, and the remaining difference was due to higher truck market share. In MY 2010, the average vehicle power was 214 horsepower, an increase of 6 horsepower since MY 2009, but lower than in MY 2007-2008. Car power increased slightly and truck power was unchanged, so the primary factor in increasing the overall power level was higher truck market share. Estimated MY 2010 0-to-60 acceleration time decreased slightly to 9.6 seconds.

Weight, Horsepower and 0-to-60 Performance



Vehicle weight and performance are two of the most important engineering parameters that help determine a vehicle's CO₂ emissions and fuel economy. All other factors being equal, higher vehicle weight (which supports new options and features) and faster acceleration performance (e.g., lower 0-to-60 mile-per-hour acceleration time), both increase a vehicle's CO₂ emissions and decrease fuel economy. Automotive engineers are constantly developing more efficient vehicle technologies. From MY 1987 through MY 2004, on a fleetwide basis, this technology innovation was generally utilized to support market-driven attributes other than CO₂ emissions and fuel economy, such as vehicle weight, performance, and utility. Beginning in MY 2005, technology has been used to increase both fuel economy (which has reduced CO₂ emissions) and performance, while keeping vehicle weight relatively constant.

Preliminary MY 2011 values suggest that average vehicle weight and performance will both increase, though these projections are uncertain and EPA will not have final data until next year's report.

Highlight #4: Most manufacturers increased fuel economy in MY 2010, resulting in lower CO₂ emission rates.

Ten of the 13 highest-selling manufacturers increased fuel economy (which also reduced CO₂ g/mi emission rates) from MY 2009 to MY 2010, the last two years for which we have definitive data, and 4 manufacturers increased fuel economy by 1 mpg or more.

Adjusted CO₂ emissions and fuel economy values are shown for the 13 highest-selling manufacturers, which accounted for 99 percent of the market in MY 2010, in order from lowest to highest CO₂ emissions for MY 2010. Manufacturers are defined in accordance with current NHTSA CAFE guidelines, and these definitions are applied retroactively for the entire database back to 1975 for purposes of maintaining integrity of trends over time. In MY 2010, the last year for which EPA has final production data, Hyundai had the lowest fleetwide adjusted composite CO₂ emissions performance, followed very closely by Kia and then Toyota. Hyundai and Kia tied for the highest fleetwide adjusted composite fuel economy value. Daimler had the highest CO₂ emissions (and lowest fuel economy), followed by Chrysler and Ford. Kia had the biggest improvement in adjusted CO₂ (and fuel economy) performance from MY 2009 to MY 2010, with a 37 g/mi reduction in fleetwide CO₂ emissions (and 2.8 mpg fuel economy improvement), followed by Hyundai (26 g/mi reduction in CO₂ emissions) and Mazda (19 g/mi reduction in CO₂ emissions).

Preliminary MY 2011 values suggest that 11 of the 13 manufacturers will improve further in MY 2011, though these projections are uncertain and EPA will not have final data until next year's report.

**MY 2009–2011 Manufacturer Fuel Economy and CO₂ Emissions
(Adjusted Composite Values)**

Manufacturer	MY2009		MY2010		MY2011	
	MPG	CO ₂ (g/mi)	MPG	CO ₂ (g/mi)	MPG	CO ₂ (g/mi)
Hyundai	25.1	355	27.0	329	27.5	323
Kia	24.2	367	27.0	330	27.2	327
Toyota	25.4	349	25.4	350	25.1	354
Honda	24.6	361	24.9	357	25.7	345
VW	23.8	379	25.0	363	25.2	360
Mazda	23.2	383	24.4	364	25.0	355
Subaru	22.6	393	23.4	379	23.9	371
Nissan	23.6	377	23.1	384	24.2	368
BMW	21.9	407	22.1	404	23.0	389
GM	20.6	432	21.3	418	20.6	431
Ford	20.3	437	20.4	435	21.3	417
Chrysler	19.2	464	19.5	455	19.7	451
Daimler	19.5	457	18.9	471	20.0	447
All	22.4	397	22.6	394	22.8	391

EPA fuel economy and CO₂ emissions data is based on model year production. This means that year-to-year comparisons can be affected by longer or shorter vehicle model year designations by the manufacturers. Section VII has greater detail on the fuel economy and CO₂ emissions for these 13 manufacturers, as well as for these manufacturers' individual makes (i.e., brands).

Highlight #5: Many new technologies are rapidly gaining market share.

Several advanced powertrain technologies are making significant inroads into the mainstream market. For example, in terms of market share, gasoline direct injection doubled in MY 2010 and is projected to triple from MY 2009-2011, turbocharging is projected to double in MY 2011, cylinder deactivation is projected to nearly double in MY 2011, and both 6-speed and 7-speed transmissions approximately doubled from MY 2009-2011. These and other technology trends help to explain the improvements in CO₂ and fuel economy over the last seven years.

Personal vehicle technology has changed significantly since the database began in MY 1975. New technologies are continually being introduced into the marketplace, while older and less effective technologies are removed from the market. For example, in MY 1975 most engines relied on carburetors to deliver fuel to the engine. Carburetors were replaced by fuel injection systems in the 1980s. Now, in some vehicles, conventional fuel injection systems are being replaced by gasoline direct injection systems.

Understanding trends in these technologies and their relationship to CO₂ emissions and fuel economy enables a better understanding of the personal vehicle market. Below is a snapshot of several important technologies for seven selected model years. The first column of data is from MY 1975, the first year of data for this report. The next two years, MY 1987 and 2004, were historical inflection points for CO₂ emissions and fuel economy (see Highlight #1). The table also contains data from several recent years.

Light Duty Vehicle Characteristics for Seven Model Years							
	1975	1987	2004	2008	2009	2010	2011
Adjusted CO ₂ Emissions (g/mi)	681	405	461	424	397	394	391
Adjusted Fuel Economy (MPG)	13.1	22.0	19.3	21.0	22.4	22.6	22.8
Weight (lb)	4060	3221	4111	4085	3917	4002	4084
Horsepower	137	118	211	219	208	214	228
0-to-60 Time (sec.)	14.1	13.1	9.9	9.7	9.7	9.6	9.3
Truck Production	19%	27%	45%	39%	31%	36%	38%
Four-Cylinder Engine	20%	55%	28%	38%	51%	50%	47%
Eight-Cylinder Engine	62%	15%	24%	17%	12%	14%	16%
Multi-Valve Engine	-	-	62%	76%	84%	85%	85%
Variable Valve Timing	-	-	39%	58%	72%	84%	94%
Cylinder Deactivation	-	-	-	6.7%	7.4%	6.4%	11.1%
Gasoline Direct Injection	-	-	-	2.3%	4.2%	8.3%	13.7%
Turbocharged or Supercharged	-	-	2.9%	3.3%	3.5%	3.5%	7.4%
Manual Transmission	23.0%	29.1%	6.8%	5.2%	4.7%	3.8%	5.1%
Continuously Variable Transmission	-	-	1.2%	7.9%	9.5%	10.9%	10.8%
6 Speed Transmission	-	-	3.0%	19.4%	24.7%	38.1%	52.4%
7+ Speed Transmission	-	-	0.2%	2.0%	2.6%	2.8%	4.9%
Hybrid	-	-	0.5%	2.5%	2.3%	3.8%	4.0%
Diesel	0.2%	0.3%	0.1%	0.1%	0.5%	0.7%	0.6%

Additional Notes on Data Contained in This Report

This report supersedes all previous reports in this series. Users of this report should rely exclusively on data in this latest report, which covers MY 1975 through 2011, and not make comparisons to data in previous reports in this series. There are several reasons for this.

One, EPA revised the methodology for estimating "real-world" (i.e., label) fuel economy values in December 2006. Every adjusted (ADJ) fuel economy value in this report for 1986 and later model years is lower than given in reports in this series prior to the 2007 report. See Appendix A for more in-depth discussion of the current methodology and how it affects both the adjusted fuel economy values for individual models and the historical fuel economy trends database. This same methodology is used to calculate adjusted CO₂ emissions values as well. Two, as discussed above, for the first time in this version of the report, EPA reclassifies most small, 2 wheel drive SUVs from trucks to cars for the entire MY 1975-2011 database. Beginning with this report, all car/truck classifications in this database are consistent with determinations made by NHTSA for CAFE standards beginning in MY 2011 and EPA for CO₂ emissions standards for MY 2012 and later. Three, when EPA changes a manufacturer or vehicle make definition to reflect a change in the industry's current financial arrangements, EPA makes the same adjustment in the historical database as well. This maintains a consistent manufacturer/make definition over time, which allows the identification of long-term trends. On the other hand, it means that the database does not necessarily reflect actual past financial arrangements. For example, the 2011 database, which includes data for the entire time series MY 1975 through 2011, accounts for all Chrysler vehicles in the 1975-2011 timeframe under the Chrysler manufacturer designation, and no longer reflects the fact that Chrysler was combined with Daimler for several years.

Through MY 2010, the CO₂ emissions, fuel economy, vehicle characteristics, and vehicle production volume data used for this report were from the formal end-of-year submissions from automakers obtained from EPA's fuel economy database that is used for CAFE compliance purposes. For MY 2011, EPA has exclusively used confidential pre-model year production volume projections from automaker label submissions. Accordingly, MY 2011 projections are uncertain. Historically, the differences between the initial estimates based on vehicle production projections and later, final values have ranged between 0.4 mpg lower to 0.6 mpg higher. But, the market turmoil in MY 2009 was a major exception in this regard, as the final MY 2009 value from the 2010 report was 1.3 mpg higher than the preliminary value for MY 2009 from the 2009 report based on projected production volumes.

The database in this report includes data from vehicles certified to operate on gasoline or diesel fuel, from laboratory testing with test fuels as defined in EPA test protocols (e.g., with zero ethanol). It includes data from ethanol flexible fuel vehicles, which can operate on gasoline or an 85 percent ethanol/15 percent gasoline blend or any mixture in between, operated on gasoline only. Data from the small number of vehicles that are certified to operate only on alternative fuels or are expected to operate frequently on alternative fuels (such as plug-in hybrid electric vehicles or dual-fuel compressed natural gas vehicles) are not included in this database because they currently represent less than 0.2 percent of all sales and because the emissions and fuel economy data from alternative fuel vehicles raise issues with respect to the metrics that are used in this report.

Vehicle population data in this report represent production delivered for sale in the U.S., rather than actual sales data. Automakers submit production data in formal end-of-year CAFE compliance reports to EPA, which is the basis for this report. Accordingly, the production data in this report may differ from sales data reported by press sources, because not all vehicles produced for sale in a given model year will necessarily be sold in that model year. In addition, the data presented in this report are tabulated on a model year, not calendar year, basis.

For More Information

Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2011 (EPA-420-R-12-001) is available on the Office of Transportation and Air Quality's (OTAQ) Web site at:

www.epa.gov/otaq/fetrends.htm

Printed copies are available from the OTAQ library at:

U.S. Environmental Protection Agency
Office of Transportation and Air Quality Library
2000 Traverwood Drive
Ann Arbor, MI 48105
(734) 214-4311

A copy of the *Fuel Economy Guide* giving city and highway fuel economy data for individual models is available at:

www.fueleconomy.gov

or by calling the U.S. Department of Energy at (800) 423-1363.

For information about EPA's Greenhouse Gas Emissions Standards, see:

<http://epa.gov/otaq/climate/regulations.htm>

For information about the EPA/Department of Transportation (DOT) Fuel Economy and Environment Labels, see:

<http://epa.gov/otaq/carlabel>

For information about DOT's Corporate Average Fuel Economy (CAFE) program, including a program overview, related rulemaking activities, and summaries of the fuel economy performance of individual manufacturers since 1978, see:

<http://www.nhtsa.dot.gov/fuel-economy>